

CHAPTER 6 – WATER SHORTAGE CONTINGENCY PLAN

6.1 OVERVIEW

As part of an urban water supplier's water shortage contingency planning process, it is important to recognize that water supplies may be interrupted or reduced significantly in a number of ways, such as when a drought limits supplies, an earthquake damages water delivery or storage systems or a toxic spill impacts water quality. The SWP is particularly vulnerable to catastrophic events as the California Aqueduct crosses the San Andreas Fault and is bisected by many other fault lines. This chapter describes how WFA and its member agencies plan to respond to such emergencies in the event that such an event may occur so that water demands continue to be met promptly and adequately.

6.2 COORDINATED PLANNING

MWD, IEUA, WFA, its member agencies, and other the water agencies within the Chino Basin have coordinated efforts in the past to meet water shortages and to anticipate catastrophic events. The cities of Chino, Chino Hills, Montclair, Ontario and Upland and the Inland Empire Utilities Agency and the Monte Vista Water District have a Mutual Aid Agreement that, in the event of any disruption or damage to the ability of either IEUA or the other agencies to provide the public or their customers water service, sewage service or sewage treatment service, the other parties will cooperate to the maximum extent possible to provide mutual aid assistance as requested.

In April 2007, the area experienced a one-week unplanned shutdown of the Rialto Pipeline. The coordinated response among the agencies worked well, and all agencies were able to achieve the necessary reduction in water use during the shutdown.

6.3 ESTIMATE OF MINIMUM SUPPLY

As indicated above and as fully set forth in MWD's Regional UWMP, MWD has adopted the Water Surplus and Drought Management Plan which addresses both surplus and shortage operating strategies. Under this plan, MWD anticipates that it can meet full-service water needs except in extreme shortages or emergencies by using stored water and/or water transfers. Under severe shortages, MWD may call for extraordinary conservation and may have to curtail Interim Agricultural Water Program deliveries (which would not impact the WFA). Only under a condition of extreme shortage would MWD be forced to limit full service allocations.

In February 2008, in anticipation of possible water supply shortages due to a prolonged condition of statewide drought, the MWD Board of Directors adopted the Water Supply

Allocation Plan (MWD WSAP). The MWD WSAP provides guidance for allocating limited water supplies to Member Agencies should the need arise. In 2009 MWD implemented its WSAP which established water budgets for each of its member agencies and charged higher rates for purchases in excess of the budgeted amounts. The program was extremely effective and successful.

In response to MWD's WSAP, the Inland Empire Utilities Agency (IEUA) developed a Drought Plan for the purpose of implementing the MWD WSAP, within the IEUA's service area in a manner that is fair and equitable to IEUA's Member Agencies. The IEUA Drought Plan is consistent with and supplements the MWD WSAP for specific IEUA service area drought planning issues. All MWD WSAP definitions, policies, principals and program provisions are incorporated here by reference and are considered to be a part of the IEUA Drought Plan. For example, if IEUA is not imposed a penalty from MWD then IEUA would not impose a penalty on a member agency within IEUA's service area. In addition, MWD does not allow resale or "marketing" of MWD WSAP allocation credits and IEUA will not allow IEUA Drought Plan credits to be sold internally within IEUA's service area or externally without IEUA's approval. A complete copy of the adopted IEUA Drought Plan and MWD WSAP is provided as an Appendix in IEUA's 2010 UWMP.

IEUA's Drought Plan is consistent with and contributes to the existing IEUA imported water policies and programs. For example, the IEUA's Drought Plan principles encourage development and full utilization of local water resources, such as recycled water and conservation measures. The IEUA Drought Plan also addresses MWD's Chino Basin Groundwater Storage Dry Year Yield (DYY) program and the need for best management of DYY program "shift" obligations concurrent with MWD WSAP reductions of imported water supplies to IEUA. In 2011, following a record high year of precipitation, MWD determined it was no longer necessary to implement the WSAP.

Consistent with the requirements of the UWMP Act, the following scenario describes the supply availability over three years using the driest 3-year period in the recent record (1990 – 1992 hydrology). Conservative assumptions include significantly lower imported water supplies than actually used in 2005 and a 10% level of voluntary conservation effort. Based upon the regional development of groundwater, dry year yield program and recycled water program, the WFA service area would be able to meet its water needs even with a 50% cut back in imported water deliveries as show in Table 6-1, Table 6-2 and Table 6-3.

Table 6-1
Projected Supply During Multiple Dry Year Period
Between 2011 and 2015 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
Supply⁽¹⁾	2011	2012	2013⁽²⁾	2014⁽²⁾	2015⁽²⁾
Groundwater	110,075	113,274	135,109	137,624	140,074
Recycled Water	15,812	16,594	17,377	19,067	20,835
Surface Water	8,085	8,136	4,012	6,921	6,383
Imported Water	32,471	36,150	19,915	21,754	23,594
% of Projected Normal⁽³⁾					
Groundwater	100%	100%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water	100%	100%	49%	84%	77%
Imported Water	100%	100%	50%	50%	50%

Notes:

(1) Supply values extrapolated from 2011 and 2015 data.

(2) DYY Program assumed to begin in year 2008 according to the Master Agreement. DYY Program in effect during multiple dry years. Assume 50% of dry year yield

(3) Projected Normal Use from Table 7-3.

Table 6-2
Projected Demand During Multiple Dry Year Period
Between 2011 and 2015 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2011	2012	2013	2014	2015
Demand	134,525	137,721	140,918	144,114	147,310
Conservation⁽¹⁾	0	0	-14,092	-14,411	-14,731
Adjusted Demand	134,525	137,721	126,826	129,702	132,579
% of Projected Normal⁽²⁾	100%	100%	90%	90%	90%

Notes:

(1) Assumed 10% conservation of demand for dry years. Refer to Chapter 4, Water Conservation Program.

(2) Projected Normal Use from Table 7-5.

Table 6-3
Projected Supply and Demand Comparison During
Multiple Dry Year Period Between 2011 and 2015 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2011	2012	2013	2014	2015
Supply Totals	166,444	174,155	176,412	185,365	190,886
Demand Totals	134,525	137,721	126,826	129,702	132,579
Difference (Supply minus Demand)	31,918	36,434	49,587	55,663	58,307
Difference as % of Supply	19%	21%	28%	30%	31%
Difference as % of Demand	24%	26%	39%	43%	44%

6.4 DRY YEAR WATER MANAGEMENT PROGRAM

WFA's members, in partnership with IEUA and other water agencies have developed a water management strategy that relies upon the use of local groundwater, desalter water, recovery of injected water, and conservation during dry years and enables the area to voluntarily reduce its need for SWP water under drought conditions.

In 2002, MWD executed an agreement with the Inland Empire Utilities Agency and the area's retail agencies to use the Chino Basin for dry year storage of up to 100,000 acre-feet of surplus imported water. The Dry Year Yield program is a conjunctive use project that consists of infrastructure investments including well head treatment facilities, new wells and conveyance pipeline improvements.

Under this program, WFA members are contributing approximately 53% of the water that will be stored in the Chino Groundwater Basin for dry year use. When MWD calls for this water during a drought, the amount of imported water processed through the plant will be reduced while the amount of groundwater production will increase. The Chino Basin Dry Year Yield (DYY) obligation to MWD will result in a reduction in the amount of water available to WFA for treatment of up to 17,647 acre-feet in a twelve month period. This cutback in full service imported water supplies is consistent with the 50% reduction scenario required to be evaluated under the Urban Water Management Plan Act. Under these conditions, as discussed above and in IEUA's 2010 UWMP, the managed framework of the Chino Basin area allows for additional groundwater production to meet dry year demands, insofar as all forms of extra ordinary water conservation are also implemented during those conditions.

6.5 STAGES OF ACTION TO RESPOND TO WATER SHORTAGES

MWD and WFA's member agencies have developed coordinated water shortage contingency plans that cover an array of potential disasters. These include emergency drought or water shortage ordinances that address:

- Catastrophic Interruption Plan
- Consumption Reduction Methods
- Contingency Plan
- Emergency Fund
- Mandatory Prohibition of Water Use
- Rationing Allocation Method
- Reduction Measuring Mechanism

Please refer to IEUA 2010 UWMP for a detailed description of the steps to be undertaken by MWD and WFA's members in responding to water shortages.

**Table 6-4
Drought Stage Definitions by Agency**

Drought Stage	Agency			
	Chino	Chino Hills	MVWD	Ontario
1	Demand estimated to be ≤10% in excess of available production of quality water	Total storage capacity reduced by 20-25%; not replenished within 48 hours	5-10% shortage of available water	Estimated shortage of up to 10% of water supplies
2	Demand estimated to be 10-15% in excess of available production of quality water	Total storage capacity reduced by 25-30% and not replenished within 48 hours	10-25% shortage of available water	Estimated shortage of 10-20% of water supplies
3	Demand estimated to be ≥15% in excess of available production of quality water	no definition	25-40% shortage of available water	Estimated shortage of >20% of water supplies
4	no definition	no definition	>40% shortage of available water	no definition

MVWD = Monte Vista Water District

6.6 FINANCIAL IMPLICATIONS TO WFA OF WATER SHORTAGES

A reduction of imported water supply will increase the unit cost of treatment for each member agency, depending on the proportionate water deliveries. The WFA has a mixture of cost recovery mechanisms based on entitlement, flow and member agencies 10 year average, and maintains a reserve for annual capital cost replacements with some limited funds to cover operating expenses for a short period of time. WFA plans to review its reserve policy and consider additional actions that will make the Authority's finances less vulnerable to unexpected and drastic reductions in water supply.